



Strategic Energy Investment Program Town Hall Meeting August 2008

*Potential Programs and Best Practices
For
Maryland*

The public is invited to submit written comments.

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REGIONAL GREENHOUSE GAS INITIATIVE

The Healthy Air Act of 2006 required Maryland to join the Regional Greenhouse Gas Initiative (RGGI) and on 4/20/2007, Governor O'Malley signed the RGGI Memorandum of Understanding making Maryland a member state. RGGI is a cooperative effort by ten Northeast and Mid-Atlantic States to design a regional greenhouse gas cap-and-trade program to reduce Carbon Dioxide (CO₂) emissions from power plants in the region. The Regional Greenhouse Gas Initiative was formed by states in the Northeast and Mid-Atlantic regions to reduce carbon dioxide (CO₂) pollution from electricity generation. Electricity generation from fossil fuels accounts for a significant portion of greenhouse gas emissions.

RGGI is an unprecedented collaboration of commissioners from both the environmental and energy agencies in the following states: Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island and Vermont. These commissioners make policy decisions regarding the creation and implementation of the program.

Cap and Trade Format: RGGI is a cap and trade program for CO₂ emissions modeled after similar successful federal programs for other pollutants such as the Acid Rain Program for sulfur dioxide and the NO_x Budget Program for nitrogen oxides (NO_x). Sources, such as electricity generators, emit pollution that is deemed harmful to the environment. Cap and trade programs limit the amount of pollution to a significantly lower level through an emissions cap applied to a specific geographic region. Cap and trade programs issue “allowances” equal to the number of tons of pollution allowed under the cap. An allowance permits a source to emit one ton of pollution. At the end of the year or specified time period, a source must have obtained allowances sufficient to cover each ton of pollution they released.

Cap and trade programs achieve pollution reductions in the most cost-effective manner because companies able to reduce emissions at a low cost can sell those reductions to companies that face high costs for pollution reductions. In total, the regional pollution reduction targets are met. Some companies reduced greatly while others may not have reduced at all, however, the cost was distributed over all sources.

Affected Sources in Maryland: Most of the electricity generating plants in Maryland are subject to the RGGI program. Included are: AES Warrior Run Cogen, Brandon Shores, C P Crane, Chalk Point, Dickerson, Herbert A Wagner, Morgantown, Panda Brandywine, Perryman, R P Smith, Riverside, Vienna, Westport, and Rock Springs Generating Facility. Two industrial plants, Nu Page and Severstal Sparrows Point, are subject to the RGGI program but may apply for an exemption under certain conditions.

The Auction: Unlike other pollutants, no control technologies exist to reduce CO₂ pollution. RGGI will accomplish its reduction goal through increasing energy efficiency and reducing demand for electricity. Toward this end, RGGI requires each participating state to auction at least 25% of the CO₂ allowances given to the state for distribution among its sources and use the money for a public benefits fund. The funds will be used to promote energy efficiency, fund renewable energy sources, provide ratepayer rebates, research new control technologies and pay for the administration of the program. The federal Acid Rain Program set a precedent for auctioning allowances, but the RGGI auction will be much larger in scale.

Economic modeling results performed for the RGGI states indicate a single allowance will cost between \$2 and \$3 dollars at the first auctions. The largest sources of emissions will need three to ten million allowances each year. Smaller sources need as few as ten thousand.

During the 2008 Legislative Session, the legislature created the Strategic Energy Investment Fund to receive the RGGI auction proceeds. The Maryland Energy Administration administers the Fund but the law requires a portion to go to MDE to support RGGI implementation and other climate change programs.

MARYLAND STRATEGIC ENERGY INVESTMENT FUND

To reduce consumers' bills, the Strategic Energy Investment Fund (SEIF) provides both short-term rate relief and a long-term strategy to increase supply and decrease demand. This approach will save households money, help avoid electricity blackouts predicted as soon as summer 2011, and minimize the State's carbon footprint.

Due to increasing demand for electricity, PJM, an organization that coordinates electricity purchases and ensures reliability within the transmission system among 14 different states, has warned that Maryland faces the risk of rolling blackouts on any hot summer afternoon, starting in 2011. The SEIF reduces the threat of rolling blackouts by decreasing demand through energy efficiency-- the fastest and least expensive way to keep our lights on, while increasing supply by promoting clean, renewable power.

What is the Strategic Energy Investment Fund?

The Maryland Strategic Energy Investment Fund was created with the proceeds from the upcoming auction of carbon allowances to electric power plants under the Regional Greenhouse Gas Initiative (RGGI). The Maryland Department of Environment estimates that auction will generate between \$80 and \$140 million annually.

- The SEIF will not rely on general funds or a surcharge on ratepayers.
- Maryland joined RGGI in 2006 as part of the Healthy Air Act.

Maximizes Rate Relief by Combining Direct Bill Credits with Energy Efficiency

The fund will provide consumers credits each month to offset their utility bills and invest in Maryland's energy future to decrease demand and increase supply.

- The average Marylander would receive a credit of \$1.28 to pay down the cost of utility energy efficiency programs, plus an extra \$7.46 through energy efficiency programs, thus saving roughly \$8.74 a month (assuming \$140 million in proceeds from the RGGI auction).

Targeted Assistance for Low and Moderate Income Households

- Guarantees 17% of the auction proceeds for bill payment assistance to low income customers through the Electric Universal Service Program (EUSP);
- Provides a consumer bill credit per household so that all Marylanders benefit;
- Requires the Maryland Energy Administration to spend half of the funds dedicated to energy efficiency to help low and moderate income households. Such programs are required to be offered at no charge to low income families.

Invest in Clean, Renewable Energy

The fund will allow Maryland to invest in programs that provide loans or leases to individuals who want to install solar, wind or another renewable energy project on their home or business.

- Customers can reduce the amount of electricity purchased from the local utility through on-site generation.
- On-site generation through solar or another technology allows the customer to have some future certainty regarding the price of electricity.

Potential Program:
Offering Energy Upgrades for Existing Homes:
Home Performance with ENERGY STAR (HPwES)

Program for: Homeowners

Program Description:

The Home Performance program is sponsored at the national level by the U.S. Department of Energy and the Environmental Protection Agency. This program would deliver whole-house, comprehensive improvements that increase energy efficiency, comfort, health and safety. Contractors are trained and certified to perform home energy assessments, then recommend and deliver improvements. The upgrades are evaluated to ensure proper installation and energy savings. Customers choose the measures to install.

Typical Energy Efficiency, Comfort, Health and Safety Improvements	
Energy-Efficient Lighting	Improved Insulation
Duct and Air Sealing	Energy-Efficient HVAC Equipment
Health and Safety Improvements*	ENERGY STAR Products

* For example, radon or carbon monoxide detection and abatement.

Customer Benefits:

- In Maryland, average energy savings would be approximately 20 percent per home. A 20 percent reduction equates to more than \$400 in savings annually for a typical home. Some customers may realize savings of up to 40 percent on home energy and water bills.
- Homes are healthier and more comfortable.
- Contractor work is reviewed by 3rd party experts who will provide homeowners with a high level of quality from the contractors.
- Workforce necessary to make the energy efficiency upgrades is able to be built and developed.

The HPwES program would include incentives [specific levels are being developed] that would pay for a portion of the upgrade costs along with a low-interest loan program that would be available to customers for financing home energy improvements.

Best Practices Example: New York Home Performance with ENERGY STAR

The New York State Energy Research and Development Authority (NYSERDA) developed the first HPwES program in the nation. The program is changing the home energy improvement market by introducing a ‘one-stop shopping’ approach to make the process as easy as possible for homeowners. NYSERDA works with a national lending program to offer a simplified low interest loan application that can be processed on-site by the contractor. Over 100 contractor firms are qualified to offer the program to homeowners and 250 technicians have been certified as analysts and installers. NYSERDA estimates the program generated more than 700,000 kilowatt hours and \$115,000 in electricity savings in the first two years.

Potential Program:
Financing Energy Efficiency Projects for Homes

Program for: Residential

Program Description:

A range of financing institutions would provide a selection of below market loan packages to encourage energy efficiency investment in the residential sector. The availability of loan funding in the current depressed housing and capital markets has been significantly restricted. This program would leverage the funds available from private markets with state RGGI funding to make energy efficiency projects available to residential customers.

Customer Benefits:

- Readily available access to loans for energy efficiency projects
- Below market rate loans which provide faster returns on investment
- Lower energy costs due to the installation of efficiency measures
- Environmental benefits of lowered amounts of greenhouse gases

Best Practices Example:
Pennsylvania Keystone Help Energy Loan Program (HELP) - Residential

The Keystone HELP program was originally launched in western Pennsylvania with West Penn Power Sustainable Energy Fund to provide loans for to make homes more energy-efficient. The HELP program originally had \$1 million in funding, but expanded throughout the state to become a \$20 million program. Fast, preferred rate unsecured financing from \$1,000 to \$10,000 or more at 8.99% APR (6.99% APR available for specified income levels).

- Fixed Rate, Fixed Monthly Payments
- No Lien Filed on Your Home (i.e., unsecured loan)
- No Home Equity Required, New Homeowners Allowed
- No Points, Fees or Closing Costs
- Up to 10 Years to Repay
- No Penalty for Prepayment
- Work must be performed by an Approved Contactor/Dealer

Potential Program: ***Adopting ENERGY STAR Products in Maryland Homes***

Program for: All Consumers

Program Description:

This program would provide rebates/incentives for the purchase of various energy-efficient ENERGY STAR lighting, appliances, and home electronics. Eligible products may include any or all of the following: compact fluorescent lights; lighting fixtures; room air conditioners; clothes washers; dishwashers; refrigerators; freezers; and dehumidifiers.

Customer Benefits:

Customers can realize substantial energy savings from installing energy-efficient products in their homes. The following table shows average annual electricity and dollar savings from selected ENERGY STAR products as compared to ones that meet the minimum standards.

Product	Average Annual Savings	Product	Average Annual Savings
Compact Fluorescent Lights	70 kWh - \$10	Refrigerators	80 kWh - \$11
Torchiere Light	300 kWh - \$40	Freezers	70 kWh - \$10
Electric Clothes Washer	260 kWh* & 7000 gal - \$80	Room Air Conditioner	70 kWh - \$10
Electric Dishwasher	140 kWh - \$20	Home Electronic	15 kWh - \$2

* Assuming electric water heating and dryer.

These energy-efficient products may be slightly more expensive to purchase (\$20 to \$170), but rebates/incentives can make them very competitive against less efficient models. Additionally the energy and water savings derived from these products will make up the difference in upfront costs in a short period of time.

For low-income customers, MEA may offer additional incentives on refrigerators and room air conditioners in the form of free collection of older units and extra subsidies on newer units.

Best Practices Example: Efficiency Vermont ENERGY STAR Rebates

Efficiency Vermont offers rebates for a variety of ES products: CFLs (\$1.50), lighting fixtures (\$10), room air conditioners (\$25-\$40), dehumidifiers (\$25), refrigerators & freezers (\$25-\$40), and clothes washers (\$50). Lighting rebates are offered as instant coupons at participating retail outlets while other product rebates are through downloadable mail-in forms. Efficiency Vermont estimates that in 2007 the ES products installed by residential customers resulted in total electricity savings of 49,510 MWh and \$6.6 million.

Potential Program:

Encouraging the Purchase of Energy-Efficient Heating and Cooling Equipment and Water Heating Equipment

Program for: Residential

Program Description:

The HVAC (Heating, Ventilations, & Air Conditioning) and Water Heating programs would deliver energy efficiency improvements related to central air conditioners, heat pumps, furnaces, boilers, and water heaters. Incentives are offered for energy-efficient HVAC and water heating equipment purchases. These programs would include contractor training and certification, enabling them to assess a home's heating and cooling needs and recommend upgrades. A quality assurance component may be included with this program to ensure the contractors are installing the systems correctly.

Customer Benefits:

- Significant energy and monetary savings can be realized.
- Homes are healthier and more comfortable.
- Contractors will be trained and certified to ensure that products are being installed correctly.
- The workforce necessary to make the energy efficiency upgrades will be able to be built and developed.

Energy-Efficient Product	Estimated Potential Average Savings
ENERGY STAR Central Air Conditioner	14-30 percent reduction in energy use
ENERGY STAR Heat Pump	8-20 percent reduction in energy use
ENERGY STAR Furnaces	15 percent reduction in energy use
ENERGY STAR Water Heater	10-50 percent reduction in energy use

Energy-efficient models typically cost more than models that meet minimum standards. Part of the extra cost, however, would be refunded through the incentive program.

Best Practices Example: Wisconsin Focus on Energy Rebates

The Heating & Cooling program is a cooperative effort of Wisconsin's Focus on Energy program and interested HVAC manufacturers, distributors, contractors, trade organizations and associations and retailers. It offers rebates on HVAC equipment installed by participating contractors. The rebates range from \$75 to \$400 dollars on designated equipment and \$60/ton for rooftop air conditioners. Homeowners can receive rebates ranging from \$50 to \$250 for the purchase and installation of energy-efficient water heaters. The Public Service Commission of Wisconsin estimates that the HVAC program has resulted in annual energy savings totaling 8,902 MWh and \$970,000.

Potential Program: ***Building Energy-Efficient New Homes***

Program for: New Home Construction

Program Description:

This program would target the new home market using the U.S. Environmental Protection Agency's ENERGY STAR Homes Qualifications as the standard. It would promote and provide training and incentives to facilitate the building of energy-efficient homes that are at least 15 percent more efficient than a house built to the current building code. Designers and builders would have the flexibility to design and construct homes in any way they choose as long as the home meets the qualifications of an ENERGY STAR Home. Typical measures used to meet performance levels include heating and cooling upgrades, duct sealing, air sealing, and upgrades to insulation and windows.

Customer Benefits:

- Customers can realize savings of at least 15 percent on energy and water costs for a typical ENERGY STAR home.
- Increasing awareness of energy-efficient building practices can transform the new construction market as a whole, leading to substantial energy and water savings as more homes are built to higher standards in the future.
- Homes are healthier and more comfortable
- Contractors/owners may also take advantage of energy-efficient product rebates to install efficient lighting and appliances, leading to additional energy savings.

According to the American Council for an Energy-Efficient Economy, the average cost of upgrading a typical new home to ENERGY STAR qualifications is approximately \$1,600. The New Homes program would include modest incentives that may pay for a portion of the upgrade costs as well as cooperative advertising opportunities for builders of ENERGY STAR Homes.

Best Practices Example: Vermont ENERGY STAR Homes Program

Efficiency Vermont runs ENERGY STAR Homes Program in conjunction with electric and natural gas utilities. ENERGY STAR Homes are currently estimated to be reaching a 25 percent market share in the State. In the Vermont Gas Systems, Inc. service area (Vermont Gas also actively promotes this program) about two-thirds of all new homes are built to ENERGY STAR qualifications. The program offers incentives ranging from \$200 to over \$1,500 per home depending on the energy-efficient options a customer chooses. A recent addition has been an appliance and lighting package bonus that consists of a \$700 rebate for installing at least 10 ENERGY STAR light fixtures and three ENERGY STAR appliances. Efficiency Vermont estimates that in 2007 the program resulted in electricity savings of 3,486 MWh and \$463,000.

Potential Program:***Making Homes More Energy-Efficient and Reducing Energy Costs for Low-to-Moderate Income Communities with Assisted Home Performance with ENERGY STAR***

Program for: Low-to-Moderate Income Homeowners

Program Description:

The Assisted Home Performance with ENERGY STAR program delivers whole-house energy efficiency improvements, with the use of diagnostic tools to determine energy and comfort problems, at reduced or no cost to the homeowner. Typical upgrades include building shell improvements, energy-efficient lighting and appliances, energy-efficient space heating, ventilation, cooling, and water heating systems, and health and safety improvements (e.g. radon or carbon monoxide detection and abatement). Homeowners with above-average energy bills will achieve the greatest savings.

Customer Benefits:

- No cost to low-income for the most effective energy efficiency improvements.
- Average energy savings per home would be approximately 20 percent, equating to more than \$400 in annual savings for a typical Maryland Home. Many homes could see reductions of even 40 percent.
- Reduce the amount of income used for paying electricity, natural gas, and water bills.
- Healthier and more comfortable homes.
- Builds and develops the workforce necessary to make the energy efficiency upgrades.

Depending on household income-level, low-to-moderate income customers would receive a partially or completely subsidized whole-house energy assessment and many of the most effective efficiency measures would be provided at no or reduced cost. Measures such as appliance replacements would be offered at a discount and/or through a low-interest loan program.

Best Practices Example: New York Assisted Home Performance with ENERGY STAR

The Assisted Home Performance with ENERGY STAR (AHPwES) program was developed by the New York State Energy Research and Development Authority (NYSERDA). It targets families earning below 80 percent of the state median income. Through the program, 10 regional contractor teams receive training and certification in building diagnostics and installation of whole-house performance improvements – the same training as required for the HPwES program. Eligible households receive a comprehensive energy assessment, financing through low-interest loans, a 50 percent NYSERDA subsidy of project costs, and installation of recommended efficiency measures.

Potential Program:***Reducing Tenant and Property Owner Costs Through Energy Efficiency in Multifamily Buildings***

Program for: Multi-Family Building Owners and Tenants

Program Description:

The Multi-Family Building program would deliver energy efficiency improvements in both existing buildings and new construction. In buildings with a significant population of low-income customers, an energy assessment would include installation of compact fluorescent light bulbs, weather stripping and basic air sealing at no cost. Significant upgrades would include building shell improvements, energy-efficient lighting and appliances, efficient space heating, ventilation, cooling, and water heating systems, and health and safety improvements. These upgrades would be partially subsidized in both new and existing buildings. New buildings would be required to meet ENERGY STAR qualifications.

Customer Benefits:

- Solves the problem of the split-incentive (property owner owns/operates the property and the tenant pays the energy bills).
- No cost to low-income customers for most effective energy efficiency improvements.
- ENERGY STAR Commercial buildings use on average 35% less energy and generate one-third less carbon dioxide than typical similar buildings.
- Reduce the amount of income used for paying electricity, natural gas, and water bills.
- Builds and develops the workforce necessary to make the energy efficiency upgrades.

Multi-family buildings would receive a subsidized energy assessment and many of the efficiency measures would be provided at reduced cost. Measures such as appliance and/or major equipment replacements would be offered at a discount and/or through a low-interest loan program.

Best Practices Example: National Grid EnergyWise Program

National Grid developed a multifamily retrofit program in the northeast to address the split incentive problem in multifamily buildings – that is, the party who owns the property and is responsible for capital investments is not the same party (tenants) who is responsible for paying the energy costs. This program assists customers and building owners with an initial energy audit with follow-up installation of low-cost energy saving measures (CFL's, air sealing, caulking) at no charge. Energy service companies then arrive to install insulation, heating and cooling equipment as recommended by the energy audit. State funds are provided to buy down the cost of energy efficiency measures. In 2006, 18,000 households were served by this program and cost approximately \$10 million. Since 1996, the program has delivered more than 149,000 cumulative annual MWh savings and 2,222,000 MWh in lifetime savings for more than 185,000 customers.

Potential Program:***Reducing Water and Waste Water Treatment Operating Costs Through Energy Efficiency***

Program for: Public Water Treatment, Waste Water Treatment Facilities, Supporting Delivery Infrastructure

Program Description:

This program would focus on implementing energy efficiency measures in order to reduce the energy consumption of public water and waste water treatment plants.

The Water and Waste Water energy efficiency program would make the following forms of financial and technical assistance available for eligible water and waste water treatment plants:

- Energy Performance Contracts (EPC) using qualified Energy Service Companies (ESCOs)
- Facility operator training courses focused on energy efficiency
- Cost-sharing of energy-efficient equipment purchases

Customer Benefits:

In the United States, it is estimated that approximately 3% of all energy usage comes from water and waste water treatment operations. By implementing energy efficiency measures and executing projects that reduce energy costs, significant cost savings can be realized for tax payers.

The cost to implement the energy efficiency measures and projects developed through this program will vary depending on the size of the treatment facility. Energy efficiency projects can be financed through the use of an Energy Performance Contract. Facilitator operator training will be offered for a nominal fee.

Best Practices Example: City of Baltimore Back River Wastewater Treatment Plant EPC

The City of Baltimore entered into an Energy Performance Contract to execute energy and water efficiency upgrades to the Back River Wastewater Treatment Plant. Through the EPC, improvements were made to plant ventilation, lighting, and pumping systems. The project also installed a cogeneration system to generate electricity from the methane gas produced by the wastewater treatment process. Financed through the plant's existing utility budget, the project is delivering over \$1.5 million in energy savings annually.

Potential Program:***Promoting Energy Efficiency through The Jane E. Lawton Conservation Loan Program and Energy Efficiency Grants***

Program for: Local Governments, Non-Profits, and Businesses

Program Description:

The Jane E. Lawton Conservation Loan Program, named for the late Delegate Lawton who was known for her dedication to the natural environment and energy efficiency, would provide below market loan packages to encourage the investment by businesses, local governments, and non-profit organizations in energy efficiency and renewable energy. The Jane E. Lawton Conservation Loan Program combined the Community Energy Loan Program and the Energy efficiency and Economic Development Loan Program into one entity. It will have some financial security requirements, depending on the type of loanee. This program can also leverage funds available from private markets with state RGGI funding.

Energy efficiency grants would be provided on a competitive basis to local governments and non-profit organizations for innovative programs designed to reduce energy consumption and/or enable the production of clean energy. Criteria for grant amounts and terms are being developed.

Customer Benefits:

- Readily available source of access to loans and grants for energy related projects
- Financial assistance through loans and grants will provide faster returns on investment
- Lower energy costs due to the installation of efficiency and renewable measures
- Lower emission of greenhouse gases and other pollutants
- Encourages the development of innovative energy technologies

Best Practices Example: Maryland Community Energy Loan Program (CELP) – Local Governments and Non-Profits

The CELP program, which was rolled into the Jane E. Lawton Conservation Loan Program on July 1, 2008, was originally launched in 1989 and has provided over \$15 million in loans to 58 organizations. These have included schools, hospitals, local governments, museums, YMCAs, and a variety of other non-profits. These organizations have saved over \$4 million annually and \$20 million cumulatively, funds that they have used to implement their core mission, rather than on energy costs.

- Up to 8 Years to Repay
- No Penalty for Prepayment
- No Security Required
- Deferred Repayment for one year to allow for Completion of Project
- Can be used as Financing for an Energy Performance Contract
- Below market rates, nominal application and closing fees

Potential Program:***Developing Incentives for the Purchase of Energy-Efficient Products for Commercial, Industrial and Institutional Customers***

Program for: Commercial, Industrial and Institutional Customers

Program Description:

This program would provide incentives like matching funds, product buy-downs, or rebates for the purchase of energy-efficient products. Examples of typical eligible products may include traffic lights, HVAC equipment, walk-in freezers and refrigerators, food service equipment, chillers, and motors.

Customer Benefits:

Customers would receive substantial energy savings from purchasing and installing energy-efficient equipment. The following table shows the average annual electricity savings from selected products as compared to products that only meet the minimum standards.

Product	Average Savings
Lighting Fixtures	20% to 75% more efficient
Exit Signs	80% more efficient
Light Commercial HVAC	\$3 to \$4 per square foot of building space
Motors	5% to 8% more efficient

While energy-efficient models can be more expensive to initially purchase than standard models, equipment incentives and avoided electrical costs can make energy-efficient models cost competitive with standard models when examined over the entire service life of the equipment.

Best Practices Example: Efficiency Maine Business Program Cash Incentives

The Efficiency Maine Business Program provides cash incentives and free, independent technical advice to help businesses save energy and money. Since 2003, Efficiency Maine has paid cash incentives to more than 1,500 Maine businesses to help them purchase and install electric energy-saving equipment. This equipment is saving Maine businesses more than 98 million kWh annually- approximately \$11.7 million a year. Efficiency Maine offers prescriptive cash incentives on the following qualified equipment:

Product	Rebate	Product	Rebate
Lighting Fixtures	\$12 to \$50	Cooler/Freezer Equipment	\$50 to \$550
Exit Sign	\$10	Motors	\$45 to \$700
HVAC Equipment	\$50 to \$250	Compressors	\$220 to \$750
Ice Makers	\$100	Pressure Controllers	\$250 to \$500

Potential Program:***Developing Custom Programs to Meet the Unique Needs of Commercial and Industrial Customers***

Program for: All Commercial and Industrial Customers

Program Description:

Custom programs offer opportunities for energy saving activities and purchases that are not covered under prescriptive rebates. These programs would be developed to target specific sectors of commercial/industrial customers such as small businesses, agriculture, manufacturing, or food service.

Customer Benefits:

Commercial and industrial businesses often fail to take advantage of energy efficiency opportunities that are exist in their normal operation, unnecessarily increasing business operating expenses. Commercial and industrial businesses can take advantage of assistance offered through custom programs to develop and implement innovative energy solutions to meet the specific needs of their business.

Custom program benefits would include the following:

- Reduced cost energy audits
- Cost-shared energy feasibility studies
- Subsidized purchases of sector specific, energy-efficient equipment not covered under traditional incentive programs

Best Practices Example: Efficiency Maine Small Business Program

This program run by Efficiency Maine (EM) is available to commercial, non-profit, and manufacturing facilities with less than 50 full-time employees or less than \$5,000,000 in annual sales. These facilities have no in-house engineering staff. The program provides a free energy audit conducted by a trained auditor who then provides a report with recommendations for achieving energy savings. Participants can choose from several EM-approved contractors to develop a plan and bid for the upgrades they wish to install. Additionally, EM provides low-interest loans of up to \$35,000 per project and cash incentives up to a maximum of \$100,000 per business. In 2007, EM distributed \$764,885 in incentives to fund 425 projects across the state. Assuming that all small businesses pay commercial electricity rates, these projects would result in over \$1.1 million in energy savings for program participants.

Potential Program:

Promoting Commercial & Industrial Facility Recommissioning

Program for: All Commercial and Industrial Customers

Program Description:

Also known as a facility “tune-up,” recommissioning is aimed at increasing the efficiency of commercial and industrial buildings. The recommissioning process involves examining a building’s current equipment systems, operation and maintenance to ensure they are operating correctly and at optimum efficiency. The facility recommissioning process is generally offered on a cost-share basis.

Customer Benefits:

- Lower energy costs by 5 to 15 percent over previous year.
- Avoid capital costs by utilizing existing assets more efficiently.
- Extend the life of facility equipment.

The energy efficiency measures and strategies identified are often implemented quickly at low or even no cost. The largest expense is the cost of the recommissioning study itself which is generally performed by trained professional engineers.

Best Practices Example: Connecticut RCx Program

The RCx was a very successful pilot initiative offered by the United Illuminating (UI) and Connecticut Light & Power (CL&P) Companies. Starting in 2008, it will be offered as a regular program. The RCx process conducts an in-depth review of a facility’s systems operations to find low cost/no cost, non-capital energy-efficient measures that will quickly and effectively result in energy savings. The program targets Connecticut’s large customer facilities in the commercial and institutional sectors, and offers incentives of up to 50% of installed costs. During the first quarter of 2008, the RCx program expended approximately \$437,000 resulting in the state saving over 11 million kWh and almost \$1.3 million dollars in electrical costs.

Potential Program:

Reducing Operating Costs Through School Energy Efficiency Programs

Program for: Public and Private K-12 Schools, Community Colleges

Program Description:

This program would identify ways to reduce the energy footprint of existing school buildings complementing the High Performance Schools Act of 2008 for new school construction that goes into effect July 2009. It would also facilitate educational programs that concentrate on reducing energy consumption and sustainable energy resources. The program would make the following forms of financial, technical, and educational assistance available for eligible schools:

- Reduced cost energy audits
- Energy Performance Contracts (EPC)
- Low-interest loans through the Jane E. Lawton Conservation Loan Program
- Energy conservation related curriculum and educational activities
- Workforce development program for older students that prepare participants for “green collar” jobs in the energy efficiency and renewable energy industries

Customer Benefits:

Energy costs are the second largest operating expense for K-12 schools. By implementing energy efficiency measures and executing projects that reduce energy costs, funds that were previously allocated to paying energy bills can now be budgeted for other uses in the school. Participants in the K-12 program will be able to reapply energy efficiency measures at home.

Community college and technical high school participants will gain exposure to “green job” training that will make them valuable in the work force.

Many energy conservation measures can be completed for little or no cost. Larger energy efficiency projects can be financed through the use of EPCs or the Jane E. Lawton Conservation Loan Program. Training and curriculum materials will be offered for free or at reduced costs.

Best Practices Example: New York Energy Smart Program

The New York State Energy Research and Development Authority (NYSERDA) offers reduced cost energy audits and cost shared technical assistance to schools through the New York Energy Smart (NYES) program. The East Greenbush Central School District participated in a cost shared energy study that identified approximately \$47,000 in energy conservation measures that could be implemented for little or no cost. These energy conservation measures represent a 4.2% reduction in energy cost that can be realized by the school district without any capital investment. NYSERDA and the East Greenbush Central School District each contributed \$10,250 to the cost of the study.

Potential Program: *Informing Consumers about Reducing Energy Costs*

Program for: All Marylanders

Program Description:

This program will conduct a focused public outreach/education campaign to inform consumers of money saving ideas that they can conduct in their home at little to no cost and about programs implemented by MEA. The campaign will also enhance the visibility of MEA's renewable energy programs.

Customer Benefits:

- Customers can reduce their monthly electricity bills through little to no cost measures and by participating in appropriate programs.
- The campaign will run in all services territories throughout Maryland focusing on these energy saving tips.

Potential Program:

Expanding Renewable Energy Grants

Program for: Residential, Small-Medium Sized Businesses

Program Description:

This program would provide grants to individuals who want to install solar, wind or another renewable energy project on their home or business.

Customer Benefits:

Customers can reduce the amount of electricity purchased from the local utility through on-site generation. On-site generation through solar or another technology allows the customer to have some future certainty regarding the price of electricity. The table below estimates the electricity a renewable energy system could generate:

Technology Type	Average Savings
Solar, 2.5 kW	250 kWh monthly, \$30 monthly
Wind Turbine, 1.8 kW	300 kWh monthly, \$36 monthly

This program would provide funding for the Maryland Energy Administration's existing grant programs for wind, solar and geothermal. Funds could be used to augment existing grant amounts.

Technology Type	Grant Amount
Solar	\$2,500 per kW, up to \$10,000
Wind	\$2,500 per kW, up to \$10,000
Geothermal	\$1,000 per ton, up to \$3,000

This year the Maryland Energy Administration has offered grants for the installation of 79 solar projects. These grants will cover the installation of 56 photovoltaic (PV) electric systems and 23 solar hot water systems. The average PV system size is 4.0 kW, with an average total installed cost of materials and labor of \$28,708. The average grant to be received is \$6,735 which will cover approximately 23% of the total system cost. Due to the high interest in the Solar Grant Program, a waitlist has been created for all new applicants still interested in receiving FY09 grants. Currently, there are 89 applicants on the waitlist, seeking over \$460,000 to help offset the costs of solar projects.

Potential Program: ***Offering Renewable Energy Loans and Leases***

Program for: Residential, Small-Medium Sized Businesses

Program Description:

This program provides loans or leases to individuals who want to install solar, wind or another renewable energy project on their home or business. The loans would be paid in part by the savings from electricity not purchased from the local utility. Given the large initial capital it requires to buy and install a solar panel system, this would give customers access to low-cost financing and other options to address high initial costs.

Customer Benefits:

Customers can reduce the amount of electricity purchased from the local utility through on-site generation. On-site generation through solar or another technology allows the customer to have some future certainty regarding the price of electricity. The table below estimates the electricity a renewable energy system could generate:

Technology Type	Average Savings
Solar, 2.5 kW	250 kWh monthly, \$30 monthly
Wind Turbine, 1.8 kW	300 kWh monthly, \$36 monthly

Normally, a customer would have to pay for the systems up-front, which for a 2.5 kW solar panel array would cost roughly \$15,000 (after the MEA solar grant). This program would allow the customer to finance the renewable energy system over a period of time.

The lease option enables a customer to put no money down, and have a 15 year fixed price for electricity, with an option to purchase the system at the end of the lease.

Best Practices Example: Connecticut Clean Energy Fund

The CT Clean Energy Fund recently announced a CT solar lease program to provide low and moderate income CT homeowners with a leasing alternative to purchasing solar PV systems. It is designed to cover the after-rebate cost of a solar system through the average savings of customer's electricity costs realized from the solar generation. A new CT Solar Leasing LLC was established to own the PV systems, and homeowners make no down payment and benefit from fixed energy costs for the entire 15 year lease period – with an option to buy after the lease term.

Potential Program: ***Purchasing Renewable Energy Credits***

Program for: Residential Customers, Businesses, Renewable Energy Developers

Program Description:

This program would support customers who install renewable energy projects like solar panels on their homes and businesses. The program would provide an up-front payment for the renewable energy credits that would be generated by the system. Homeowners and businesses could reduce the cost of installing a renewable energy system like solar panels if they could realize the value of the RECs that are generated by their system. This program would make it easier to sell a small number of RECs, thus providing a financial benefit to the owner.

This program could be used to create an incentive for both large and small renewable energy projects, though there is an especially noticeable need for small projects. Small projects tend to have high per REC transactions costs because the average small project is only generation two or three RECs per year.

Customer Benefits:

For residential solar RECs a 15 year up-front purchase would be valued at roughly \$2,000 - \$3,000 kilowatt installed.

Best Practices Example: *New Jersey's Solar Financing Program*

New Jersey relies on Solar Renewable Energy Credits (SRECs) to spur private investment and market development for solar technologies. Photovoltaic system owners can choose to sell their SRECs to a broker, aggregator or a utility that must buy SRECs to meet its RPS obligation. Some solar installers or project developers will offer to buy the SRECs as part of the project financing, thereby reducing the amount of capital needed up front to finance a project.

Potential Program: ***Offering Production Incentives for New Renewable Energy***

Program for: Large Businesses - Renewable Energy Project Developers

Program Description:

This program provides production incentives for the generation of new, renewable electricity. Payment is usually in the form of a price per kilowatt hour. This will create an incentive for developers to build new, clean generation in the State.

The State currently has a production tax credit of \$0.0085 per kilowatt hour (0.85 cents), with an individual project cap of \$2.5 million and an overall cap of \$25 million. By comparison, the federal production tax credit is \$0.015 (1.5 cents) per kilowatt hour (adjusted for inflation, now \$0.019 per kilowatt hour, or 1.9 cents/kWh).

Customer Benefits:

Customers benefit by additional generation capacity on the grid. In addition, these new power plants will be clean and will provide diversity to the State's electricity generation supply mix. Increasing the presence of renewable energy generation in Maryland will help to reduce price volatility.

Best Practices Example: California and Illinois

California, the first state to use production incentives, used an auction to select companies that bid the lowest production incentive. The lowest bidders were accepted until funds were exhausted or all bids were selected. The California Energy Commission held three auctions between 1998 and 2001, and selected 81 projects representing more than 1,300 MW. To date, 47 of the 81 projects are operating for a total installed capacity of 488 MW.

One variation to using an auction is to award lump sums and have projects earn the incentives over time with electricity generation. Pennsylvania, Oregon and Illinois have used this approach. Illinois provided a \$2.75 million production incentive up-front for the 54 MW Crescent Ridge wind project, and the developer provided a letter of credit that declines over time as generation is produced from the facility.

Potential Program:

Providing Grants for Alternative Fuel Vehicles and/or Infrastructure

Program for: Local Governments

Program Description:

This program would provide grants or loans to local government to increase the use of electric and hybrid vehicles in their fleets or to build alternative fuel infrastructure. MEA would issue a solicitation for projects to local governments, and make grant or loan awards through a competitive process.

For example, Governor Martin O'Malley recently announced that the Maryland Transit Administration will purchase only hybrid buses in the future, adding up to 500 by 2014. Hybrid and electric vehicles have numerous applications ranging from transit buses to neighborhood electric vehicles which are the size of a golf cart. A vehicle using electricity instead of gasoline travels at the equivalent of 75 cents per mile. While the range of electric vehicles is limited, 80% of Americans drive less than 50 miles per day – well within the range of an electric vehicle.

Customer Benefits:

- Reduced fuel consumption
- Lower vehicle maintenance
- Less noise pollution
- Lower cost
- Home refueling for plug-in hybrids electric vehicles and electric vehicles

For example, based on a test of hybrid buses, the Maryland Transit Administration found these benefits of hybrid buses:

Diesel	Diesel-Electric Hybrid
3,300 miles between service calls	6,200 miles between service calls
	20 percent less fuel
	50 percent quieter

Best Practices: New York City Transit

New York City Transit will have 800 hybrid buses in its fleet by the end of 2008. A study found that NYC Transit's buses traveled 3.19 miles per gallon, 34 percent farther than their non-hybrid buses. Similar results were found in a study of Seattle's hybrid buses.

In January of 2008, General Motors announced orders from Washington, DC for 950, from Philadelphia for 480 and from Minneapolis/St. Paul for 300.